

APPENDIX III. EXAMPLE COMMISSIONING REPORT

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Sample Commissioning Report:

The house surveyed is located in Concord, CA. It was built in 1976, and contains 2,462 square feet of living space. This house is a two-story, three-bedroom, two and a half bath home. The construction is wood frame with stucco siding, a clay tile roof, and an uninsulated slab-on-grade foundation. Below is a chart of the tests performed at this house and a summary of the results.

A visual inspection of the furnace/ air conditioner indicated that it is a 25 year old, low efficiency unit that is in need of replacement. There is an opportunity to replace this unit with a high efficiency (90% AFUE) furnace that includes an evaporator equipped with TXV control and a 14 SEER A/C condenser. The new unit should be sized in accordance with the package of energy saving measures that are performed in the retrofit. Note that there is no need to increase the air-handler airflow or to add charge to the old cooling system if the unit is being replaced.

Task	Tuning & Tweaking (T) or Opportunity (O)	Name	Result	Recommendation	Energy Savings Potential
1	O	Insulation Inspection	R-26 ceiling R-11 walls Uninsulated slab.	Add insulation in attic to bring it up to nominal R-38.	Medium
2	O	Window Inspection	Single-glazed aluminum frame windows.	Upgrade to double-glazed, low-e, low solar gain, fiberglass or vinyl frame windows.	Medium
3	T	Envelope Airtightness Test and Leak Detection	NL = 0.97, ELA = 278 in ² . Major leak sites were found between the attic and living spaces.	Seal building envelope, but no tighter than NL = 0.5. Seal mechanical and plumbing chases in attic. Seal top of stairwell walls in attic. Improve attic hatch weatherstripping. Seal plumbing penetrations in kitchen and bathrooms.	Medium
5	T	Delta Q Duct Leakage Test	Qs=35 cfm, Qr=408 cfm	Install new return duct because the location of the existing duct does not allow access for sealing.	High
7	T	Air-Handler Airflow: Fan-Assisted Flow Meter	804 cfm	Increase airflow to 1200 cfm if cooling system is not replaced.	Medium
11	T	Supply Register Airflows	Refer to register flow chart for measured values.	Dining room airflow is 25 to 35% low, master bedroom airflow is 65% low, other bedrooms and bathrooms are moderately high. Adjust dampers to improve comfort.	Medium
12	T	Superheat Refrigerant Charge Test	Low charge.	Add refrigerant charge if cooling system is not replaced.	High

Supply Grille Airflow Comparison

Location of Grille	Measured flow [cfm]	Required flow* [cfm]	Deviation [cfm]	Deviation [%]
Dining/living (near kitchen door)	101	156	-55	-35
Dining/living (under piano)	55	74	-19	-26
Game room (bathroom)	126	131	-5	-4
Game room (laundry)	140	131	9	7
Bathroom	28	8	20	250
Master bedroom	36	102	-66	-65
Master bedroom (closet)	32	51	-19	-37
Master bathroom	28	15	13	87
Bedroom (front of stairs)	67	40	27	68
Bedroom (corner)	60	45	15	33
Office	76	43	33	77
Girls bathroom	29	9	20	222
Total	778	805	-27	3

* Required flow is based on room thermal loads calculated using ACCA Manual J for the post-retrofit condition.